



WMO SECRETARIAT

**WMO SDS-WAS Region for Northern Africa/Middle East/Europe
First Meeting of the Regional Steering Group (RSG)
24-25 November, Institut National de la Météorologie HQ, Tunis-Carthage, Tunisia**

Minutes

Monday 24 November 2008

The meeting starts with a welcome message from the director of the Meteorological National Institute, **Mr Moncef RAJHI**, on behalf of the Tunisian Minister of Transport. The welcome message will be distributed in English and French to the participants.

Dave PARSONS gives a welcome message on behalf of the WMO. The meeting has 23 participants, including 10 Tunisians of the National Institute of Meteorology. WMO appreciate very much the Spanish EAMET for providing support to several participants from Africa through a trust fund.

The Regional Steering Group *chair* proposed is **Michael SCHULZ** and the *rapporteur* is **Laurent MENUT**. The agenda is adopted as initially proposed. A visit to the Tunisian national institute of meteorology is planned for the afternoon of Tuesday 25 November.

David PARSONS presented the history and milestones of the SDS-WAS: the last action was the first draft of the implementation plan in July 2008.

The discussion started on the need to better define the relative role of the global and regional contributions in the steering committees.

Each participant gave a presentation on his/her scientific activities and projects and suggested contributions to the region node of the SDS:

Georges KALLOS gives an overview about the SKIRON modeling system (with the recent implementation of the RRTM radiative transfer scheme). He presents the ICLAMS model development (in the framework of the CIRCE project).

Petroula LOUKA presents the forecast performed in the Hellenic National Meteorological Service (HNMS). The models are COSMO-GR, SKIRON, RAMS, all forced by ECWMF meteorological fields.

Carlos PEREZ presents the BSC forecast system, combining air quality and mineral dust modeling. Current projects are on visibility, improvement of near-real time model validation) with AERONET stations implementations), analysis of the SAMUM campaign measurements, the BODEX 2005, 50 year regional climatology with BSC/DREAM model, and cross-cutting applications (health, ocean, livestock)

Emilio CUEVAS presents the Spanish ambient air PM characterization managed by the CSIC, and its procedure to identify and quantify the Saharan dust contribution to PM surface levels. PM data from Southern Europe stations could be gathered and managed within the SDS WAS RC by the CSIC. In a second presentation concerning the AEMET activities on SDS WAS he presents the current developments of algorithms for SEVIRI dust products, near-real time qualitative verification,

studies on dust long-term trends, and dust characterization over the North Atlantic. Future works will concern relations between dust and meningitis epidemics (a WP of MACC).

Moncef RAJHI asks for an overview study on all experiments done in North Africa about mineral dust emissions and transport (including collection of all measurements done since the 90's, in a common format and in a database for all committee members).

Pavel KISHCHA presents the Israel modelling system for dust and sea-salt, based on DREAM8. Results are presented in the TAU forecast web page. Current studies are on the interactions between dust and sea-salt aerosols.

Some questions are addressed about dust seasonal forecast capabilities: are studies planned for the quantification of NAO impact on dust seasonality in North Africa? Are there some links between the global and regional communities about the regional dust seasonality? Asian regional node is also focusing on dust seasonal forecast research. In the future we will need to face this issue by encouraging existing or new research partners to undertake this activity.

Mohamed EISSA presents trends studies performed in Egypt. He presents a scenario study on global warming and concludes on impact on dust emissions and transport.

Olivier BOUCHER, from the Met Office, presents dust forecasting as part of the European GEMS project (which will morph into MACC). The current work concerns the implementation of a simplified dust emissions scheme in the ECMWF IFS model. Model results are compared to MODIS data and then assimilated. The future work will be to improve the model (stratospheric aerosols, improved sources, aerosol radiances, two-variable assimilation scheme etc.)

Gelsomina PAPPALARDO presents the EARLINET contribution to this group. 25 lidars are actually operated in Europe. The planned activities are linked to quantitative comparisons of vertical structures and optical properties with the DREAM model. An extension of this type of comparisons to the others models may be discussed. The GALION (GAW Aerosol Lidar Observation Network) project is presented: same principle than EARLINET but extended to the world (RAMAN lidar if possible).

Benjamin LAMPTEY presents the future activities planned for the Ghana. First project is to set-up a numerical modelling unit for Ghana (not existing yet). A study about the Harmattan in 2006 was recently performed. The THORPEX-Africa is planned as well as a weather-meningitis study.

Vincent-Henri PEUCH presents the dust modeling and forecasting at MeteoFrance. Calculations are done with the global MOCAGE CTM. Output results are part of the AEROCOM B project to really compare results with other results.

Laurent MENUT presents the CHIMERE-DUST current studies: processes and sensitivity studies (emissions, wind speed modeling impact). The CHIMERE-DUST will be soon a part of the CHIMERE parallelized model. Current projects are on the wind speed distributions, the parameterization of thin layers long-range transport, the model to observations approaches (calculations of the CALIOP scattering ratio), the sub-grid scale variability of dust emissions.

Yves GOVAERT presents currently developed algorithms to better extract quantitative dust information from SEVIRI-MSG.. The results are a quantification of spherical versus non spherical aerosols composition of dust observed over Europe. Results are compared to MODIS. An operational implementation is expected for 2010, and based on hourly retrieval AOD.

After all these individual presentations, **Carlos PEREZ and Emilio CUEVAS** present the current and planned activities of the Regional SDS-WAS Centre. The main components of the future multi-model forecast system are presented (comparisons between models outputs, comparisons to data and use of the common NetCDF Climate and Forecast data format). The standard for the results and databases access could be the AEROCOM project formats. It is first recognized that for

success in the long term, it is important to establish a mix of research and operational activities with a strong dialog and link to capacity building. Current capacities permit useful information to be provided to users. However, we still face strong uncertainties in forecasts and quantitative observations in and near sources. The proposed activities for the regional node during the period 2009-2010 were:

- 1) Implement a “Distributed Federated Information and Delivery System”, through an Internet portal, of comprehensible and standardized products related to the dust phenomena in the region, including observations and forecasts from associated institutions:
 - Near real time observations identified are: PHOTONS/AERONET Sun photometer network, SYNOP and METAR visibility, PM10 in Southern Europe, Satellites (SeaWiFS, MODIS, MSG, OMI (AI and OMAERO products), CALIPSO)
 - Preliminary list of models (list is not exhaustive and needs to be completed and updated):

SDSWAS_ID	Model	Type	Daily Forecasts	Operational	Responsible
CHIMERE_Dust	CHIMERE-Dust at LMD	Regional	X		Menut
BSC_DREAM	DREAM at BSC	Regional	X		Pérez/Baldasano
SKIRON	SKIRON at UA	Regional	X		Kallos
TAU_DREAM	DREAM at TAU	Regional	X		Kishcha
LM_MUSCAT_DES	LM_MUSCAT at IFT	Regional			Tegen
RegCM3	RegCM3 at ICTP	Regional			Zakey
Meso-NH		Regional			Tulet
RAMS-DMP		Regional			Bouet
NAAPS	NAAPS at U.S Navy	Global	X	X	Westphal
MOCAGE-dust	MOCAGE-dust at MeteoFrance	Global	X	Pre-oper	Peuch
??	??	??			Wilson
GEMS-Aerosol	GEMS-Aerosol at ECMWF	Global	X	Pre-oper	Morcrette/Boucher
LMDz INCA	LMDz INCA at	Global	X		Schulz
BSC_NMMb-dust	NMMb_dust at BSC	Global			Pérez/Baldasano
GFS-GOCART	GFS-GOCART at NCEP	GLOBAL		Pre-oper	Mcqueen
.....					

- 2) Implement a near real-time quantitative and qualitative common verification system for all participating forecast models included in the web-site. It is recognized that there is a number of advanced research dust models that do not produce daily dust forecasts.
- 3) Prepare evaluation system of historical/archived data, multi-year simulations and tailored multi-model experiments: It is proposed to use AEROCOM system with regional dust models (forecast and research models). AEROCOM system already includes a significant amount of observations (including MODIS, POLDER, MISR, AVHRR, SEAWIFS, TOMS, AERONET, EARLINET and surface concentrations). AEROCOM needs to be adapted to

specificities of regional scale dust models. There is also a need to filter and introduce additional regional observations, including observations from dust experimental campaigns (BODEX, SAMUM, etc.), visibility, etc.

- 4) Agree and run first multi-year simulations with current modelling systems
- 5) Identify, test, validate new forecast products (e.g. visibility)
- 6) Prepare meeting by the end of 2010 to analyze and discuss first results
- 7) Start establishment of effective links with users (health, ocean, National Meteorological Services, air quality managers,...)
- 8) Establish permanent coordination/collaboration with other Regional Nodes (Asia,..)
- 9) Capacity building for users of the system: Technology transfer with self-sustaining capability and long-term partnership in mind. Consultation meetings with national users to develop effective and realistic products and tools for their needs; i.e. National Meteorological Services, ACMAD, WHO, for aviation operations, meningitis epidemics.... Training courses on use of services that are available; i.e. Model and satellite data interpretation and utilisation
- 10) Data Dissemination with systems other than web page (Eumetcast, WIS..)

Discussion:

Numerous suggestions were done for changes in the international plan draft. David will change the text and will send a revised version by e-mail to each member.

The definition of the users and of the products to be delivered has to be discussed more. A consensus is done to have a short text about the time schedule for the next two months, with clear responsibilities and identified persons.

First set of actions:

- The first proposal to have a preliminary web page with 'live' links on forecast is adopted.
- The second proposal to adapt the AEROCOM system was also discussed.
- A letter will be written to every modelling group to define what parameters, resolutions etc. they are able to provide.
- A first private web site will be prepared, available in one month: each modeller can give comments before the opening of the public version.

Tuesday 25 November 2008

The regional implementation plan is proposed to be an annex of the general international implementation plan.

The chairman, **Michael Schulz**, recalls in an overview the discussions of the first day.

There was agreement reached on the following:

- 1) A knowledge base on dust modelling was presented during this workshop, showing that scientific results are ready to be disseminated and used. This includes the meteorological services involved in the studies.
- 2) For the specific case of SDS, meteorological services and research institutions will have together the capacity to well manage the project and both type of institutions should be represented in the regional steering committee.
- 3) New partners are encouraged to join the SDS activity, both for enhancing the observational component and the modelling framework.
- 4) There is a need to enhance the observational capacity in some regions such as North Africa and Central Africa. Such an enhancement should make a link through the existing networks.
- 5) The participants express their gratitude towards the Spanish Met Office (AEMET) for supporting the planned SDS activities through the establishment of the Regional Centre in Spain in consortium with BSC. The offer is appreciated and it is in the interest of this steering group to

highlight this as a very positive point. George Kallos asks for a clarification on the role of regional Centre to be better defined and asks for task distribution to the different partners on the region.

Evolution of the regional implementation plan:

David Parsons presents the changes suggested to the implementation plan, and specifically proposes that a specific implementation plan for the functioning of the regional node should be added as an annex to the general SDS implementation plan.

The proposed governance of the regional node consists of an open regional steering group, where members of the RC and of participating institutions are represented. A chair and the tasks leaders selected from the steering group will be part of the regional steering committee.

In accordance with this suggestion a list of tasks with task group leaders and contributing partners around each task is proposed. (see ANNEX for detailed composition of steering group and steering committee)

The steering committee was adopted thus to be composed of:

Michael SCHULZ (LSCE) (chair), Olivier BOUCHER (UK Met Office), Ina TEGEN (IFT), George KALLOS (Univ Athens), Emilio CUEVAS (AMET), Benjamin LAMPTEY (THORPEX/Africa Ghana), Moncef RAHJI (Tunisian Met Service), Slobodan NICKOVIC (WMO Secretariat), Jose BALDASANO (BSC), Carlos PEREZ (BSC), Vincent-Henri PEUCH (MeteoFrance),

It is proposed that the term of a chairmanship of the steering committee corresponds amounts to a period of two years. The chair (Michael SCHULZ) is actually from a research institute (for the first phase of the project), and may be from a Meteorological Service for the second phase of the implementation plan (more operational).

George Kallos suggests that the “horizontal” coordination across tasks is ensured (how information will circulate between the tasks?)

A discussion follows on the repartition of the work among the three data evaluation tasks. The interest to merge or not “long-term reanalysis” and “specific events studied cases” under one task was discussed. This was left to be decided for a follow up meeting since the tasks are esteemed to be very different at the moment, even if a lot of tools are common.

Jose Baldasano proposes to formalize an agreement for all institutes concerned by the data distribution. This agreement may allow for several degrees of implication of the participating institutions. The agreement may also include specific information on how the different institutions will contribute through the provision of observations and model data.

WMO will take a lead on assembling the suggestions for such a data exchange agreement and will circulate the agreement to all participating institutions for approval.

Jose Baldasano suggests as well the need for coordination/collaboration with the Asian regional node. He proposes that an observer of our regional node should closely follow the activities and be present on the meetings of the Asian regional node.

The minutes shall be translated in French for better discussions with all partners.

The domain of interest has to include Central Africa. ‘North Africa’ is misunderstood. We may replace it by ‘Northern Africa’ or ‘North-Central Africa’

For each listed task, the task leaders are asked to consult the steering group and provide two pages of guidelines and organization, to be assembled by the WMO secretariat.

The participating institutes shall be encouraged to try to use the Spanish trust fund set up by the WMO to further promote joint activities, such as meetings and joint analysis. Participants are encouraged to formulate and submit projects to use funds assembled in the trust fund for the SDS.

The regional steering committee is suggested to provide guidance on the proper use of these funds.

Distribution of documents concerning the description of each task (to regional and international steering group) shall be achieved by end of January 2009.

Comments from the entire group are suggested to arrive by end of February 2009.

The final draft of the implementation plan for the *regional* node shall be available by the end of March 2009.

The proposed governance through a steering committee, comprised of task leaders and a chair is adopted. Members of the steering group are representatives of each contributing institution having agreed to the data exchange agreement.

The meeting expressed sincere gratitude and thanked the hosting Tunisian Met Office for organising a successful and pleasant meeting.

ANNEX

Proposed Tasks, Leaders and Core Group for each task

The implementation of the regional activities will be described in an annex to the General Implementation Plan for the project. These activities in the Regional Node will be performed through proposed tasks, as listed below. For each task, Task Leaders and Task Core Groups are specified. Texts of 1-2 pages per task area will be developed through widespread consultation, being as specific as possible in defining activities and time-lines for each task area. Task descriptions will be distributed to Regional Steering Groups and International Committee by end January, asking for comments to be sent by mid March. Draft is planned to be finalized by mid April.

1. Web portal design and management; data archive

Leads: Carlos PEREZ (BSC) and Laurent MENUT (LMD)

2. Forecast model products

Leader: Vincent-Henri PEUCH (MeteoFrance)

Modelers and users

3. Near-real-time verification of forecast systems

Leader: Olivier BOUCHER (UK Met Office and GEMS/MACC)

***BSC,
LSCE,***

Data providers

4. Model evaluation by reanalysis (2003-2008)

Leader: Ina Tegen (Leibniz Institute for Tropospheric Research)

LSCE

Egypt Met Office

5. Model evaluation for selected test cases

Leader: Kallos University of Athens

Tel Aviv University

6. Observational data products

Leader: Emilio Cuevas (AMET)

EUMETSAT

CNR, Italy

Aeronet

7. User consultation

Leader: Benjamin LAMPTEY (THORPEX/Africa Ghana)

WMO Secretariat

Greek Met Office

8. Enhancement of observational capacity

Leader: Moncef Rahji (Tunisian Met Service)

WMO Thorpex/Africa and GAW

Aeronet

AEMET

9. General support of the group

Leader: S. Nickovic (WMO Secretariat)

Proposed governance

- Attendance of the future Steering Group (RSG) meetings will be open
- The Regional Steering Committee (RSC) will be composed of the RSG Chair, Task Leaders and the Representative of the Regional Node (Jose Baldasano)

Proposed changes to the Implementation Plan

A draft version of the General Implementation Plan (GIP) for international SDS activities was considered in the Meeting. GIP elaborates in general terms steps and phases of actions to be implemented in the period 2009-2013. The role of regional nodes is not described in details there, leaving to regional steering groups to specify details of activities of the regional node and its partners. GIP is developed to provide a general framework in support of detailed plans to be specified by the regional nodes. Below are listed the discussed issues specific for the Region that will represent inputs for the changes to GIP for the regional node.

- GIP should include mechanisms for addressing issues for global NWP and climate modeling that reach beyond the current charge of the regional centres (e.g. use regional activities to test global models);
 - Action: V.-H. Peuch to provide draft text
- International governance:
 - Action: RSG chair and WMO Secretariat to communicate these comments to Intl Program and report actions to the RSG
 - The International Steering Committee should include a more balanced representation that includes members from Northern Africa and the Middle East
 - Cover the range of activities (end users, NHMSs, research, modeling and observations)
 - To establish direct links between the International Committee and the Regional Steering Group leadership and between the regional committees
- The IP should stress the importance of mechanisms that provide proactive communication of progress and activities to the research, NHMSs and user communities
 - Action: WMO Secretariat to draft a text and the Regional Steering Group should recommend a regional training workshop and technical meeting
- The IP should include mention of possible links to existing related efforts such as HYMEX, MOON, THORPEX, THORPEX Africa, regional climate studies and efforts to produce, deliver and utilize monthly and seasonal forecasts
 - Action: WMO Secretariat to draft text
- To maintain the unique collaboration between research and operational groups that can advance understanding and improve model physics with the task of providing forecast products to users
 - Action: G. Kallos to draft text
- To Improve Fig. 3 to better reflect the modeling process
 - Action: D. Parsons and G. Kallos to suggest improvements
- To Include a philosophy of making widespread use of existing observational frameworks for communicating information and verification
 - Action: Gelsomina Pappalardo to provide text

Other action items

- Action: To circulate minutes
- Action: To distribute Galion plan, African THORPEX plan and general comments (Mohamed Eissa, David Parsons)
 - WMO Secretariat
- Action: To send letters from WMO SG to potential providers of model output and observations (follow the TIGGE example)
 - WMO Secretariat
- Action: To suggest concise comments on International Plan and send by end of January

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